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2016

# Curricular Affairs Committee Report #533 Appendix I

University of Rhode Island Faculty Senate

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**Notice of Change for requirements for the BS in Chemical Engineering**

**Date: 4-11-2016**

**A. PROGRAM INFORMATION**

**1. Name of institution**

University of Rhode Island

**2. Name of department, division, school or college**

Department: Chemical Engineering

College: Engineering

**3. Intended initiation date of program change. Include anticipated date for granting first degrees or certificates, if appropriate.**

Initiation date: Fall Semester 2016

First degree date: 2020

**4. Intended location of the program: URI Kingston**

**5. Summary description of proposed program (not to exceed 2 pages).**

The Chemical Engineering program would like to be consistent with the COE and allow students to take the two courses in "Entrepreneurship", EGR 325 and 326 as Professional Electives. At present we do not allow electives from the COE under 400 level. This will also move us forward toward leading schools such as Stanford which promote entrepreneurship in their undergraduate students.

**If applicable, please include the existing URI catalog language and proposed catalog language changes that relate to your request.**

**Current Language:**

*Professional Elective Requirements:* Half of the professional electives are to be 400-level or higher CHE courses taken at URI. The remaining courses are to be 300-level or higher in natural science, or 400-level or higher in engineering (BME, CHE, CPE, CVE, ELE, ISE, MCE, OCE), or 400-level or higher in MTH. *All professional electives require prior approval by CHE advisor.*

**Proposed Language:**

*Professional Elective Requirements:* Half of the professional electives are to be 400-level or higher CHE courses taken at URI. In addition EGR 325 and EGR 326 are permissible approved professional electives. The remaining courses are to be 300-level or higher in natural science, or 400-level or higher in engineering (BME, CHE, CPE, CVE, ELE, ISE, MCE, OCE), or 400-

level or higher in MTH. *All professional electives require prior prior approval by CHE advisor.*

**6. Signature of the President**

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David M. Dooley

# CHEMICAL ENGINEERING - Class of 2019

Total Credits = 120

## Freshman Year Fall Semester

Course Code	Description	Cr	
CHM 101	General Chemistry I Lec [GE-N]	3	
CHM 102	General Chemistry I Lab	1	
EGR 105	Foundations of Engineering I	1	
MTH 141	Intro Calculus w/Analytic Geom [GE-MQ]	4	
PHY 203	Elementary Physics I Lec [GE-N]	3	
PHY 273	Elementary Physics I Lab [GE-N]	1	

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## Freshman Year Spring Semester

Course Code	Description	Cr	
CHM 112	General Chemistry II Lec [GE-N]	3	
CHM 114	General Chemistry II Lab	1	
ECN 201	Principles of Microeconomics [GE-S]	3	
EGR 106	Foundations of Engineering II	2	
MTH 142	Intermed Calc with Analytic Geom [GE-MQ]	4	
PHY 204	Elementary Physics II [GE-N]	3	
PHY 274	Elementary Physics II Lab [GE-N]	1	

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## Sophomore Year Fall Semester

Course Code	Description	Cr	
CHE 212	Chemical Process Calculations	3	
CHM 227	Organic Chemistry Lec I	3	
MTH 243	Calculus for Functions of Several Vars	3	
	General Education Elective*	3	

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## Sophomore Year Spring Semester

Course Code	Description	Cr	
CHE 232	Materials Science and Engineering	3	
CHE 272	Intro to Chemical Engineering Calculations	3	
CHE 313	Chemical Engineering Thermodynamics I	3	
CHM 228 or BCH 311	Organic Chemistry Lec II or Introductory Biochemistry	3	
MTH 244	Differential Equations	3	

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## Junior Year Fall Semester

Course Code	Description	Cr	
CHE 314	Chemical Engineering Thermodynamics II	3	
CHE 347	Transfer Operations I	3	
CHM 335	Physical Chemistry Lab	2	
CHM 431	Physical Chemistry I	3	
	Approved Mathematics Elective**	3	
	General Education Elective*	3	

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## Junior Year Spring Semester

Course Code	Description	Cr	
CHE 348	Transfer Operations II	3	
CHE 364	Chemical Kinetics and Reactor Design	3	
CHM 432***	Physical Chemistry II	3	
	General Education Elective*	3	
	General Education Elective*	3	

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## Senior Year Fall Semester

Course Code	Description	Cr	
CHE 345	Chemical Engineering Lab I	2	
CHE 349	Transfer Operations III	2	
CHE 351	Plant Design and Economics I	3	
CHE 425	Process Dynamics and Control	3	
CHE 428	Professional Experience	1	
	Approved Professional Elective****	3	
	General Education Elective*	3	

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## Senior Year Spring Semester

Course Code	Description	Cr	
CHE 346	Chemical Engineering Lab II	2	
CHE 352	Plant Design and Economics II	3	
	Approved Professional Elective****	3	
	Approved Professional Elective****	3	
	Approved Professional Elective****	3	

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\* Note: Refer to *specific* Chemical Engineering General Education *course requirements* (see 2019 CHE Check Sheet).

\*\* Mathematics Elective: MTH 215 or any 300-, 400-, or 500-level MTH course *except* MTH 381.

\*\*\* Or approved Professional Elective (see \*\*\*\* below).

\*\*\*\* Professional Electives: Half of the Professional Electives are to be 400-level or higher CHE courses taken at URI. The remaining courses are to be 300-level or higher in natural sciences, or 400-level or higher in engineering (BME, CHE, CPE, CVE, ELE, ISE, MCE, OCE), or 400-level or higher in MTH. *All professional electives require prior approval by CHE advisor.*

# CHEMICAL ENGINEERING - Class of 2020 (DRAFT)

Total Credits = 120

## Freshman Year Fall Semester

Course Code	Description	Cr
CHM 101	General Chemistry Lec I (A1)	3
CHM 102	General Chemistry I Lab	1
EGR 105	Foundations of Engineering I (A4)	1
MTH 141	Intro Calculus with Analytic Geom (A1, B3)	4
PHY 203	Elementary Physics I (A1)	3
PHY 273	Elementary Physics Lab I (A1)	1

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## Freshman Year Spring Semester

Course Code	Description	Cr
CHM 112	General Chemistry II Lec	3
CHM 114	General Chemistry II Lab	1
ECN 201	Principles of Microeconomics (A2)	3
EGR 106	Foundations of Engineering II (A4)	2
MTH 142	Intermed Calc with Analytic Geom (B3)	4
PHY 204	Elementary Physics II (A1)	3
PHY 274	Elementary Physics Lab II (A1)	1

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## Sophomore Year Fall Semester

Course Code	Description	Cr
CHE 212	Chemical Process Calculations	3
CHM 227	Organic Chemistry Lec I	3
MTH 243	Calculus for Functions of Several Vars (A1, B3)	3
	General Education Outcome*	3

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## Sophomore Year Spring Semester

Course Code	Description	Cr
CHE 232	Materials Science and Engineering	3
CHE 272	Intro to Chemical Engineering Calculations	3
CHE 313	Chemical Engineering Thermodynamics I	3
CHM 228 or BCH 311	Organic Chemistry Lec II or Introductory Biochemistry	3
MTH 244	Differential Equations	3

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## Junior Year Fall Semester

Course Code	Description	Cr
CHE 314	Chemical Engineering Thermodynamics II	3
CHE 347	Transfer Operations I	3
CHM 335	Physical Chemistry Lab	2
CHM 431	Physical Chemistry I	3
	Approved Mathematics Elective**	3
	General Education Outcome*	3

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## Junior Year Spring Semester

Course Code	Description	Cr
CHE 348	Transfer Operations II	3
CHE 364	Chemical Kinetics and Reactor Design	3
CHM 432***	Physical Chemistry II	3
	General Education Outcome*	3
	General Education Outcome*	3

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## Senior Year Fall Semester

Course Code	Description	Cr
CHE 345	Chemical Engineering Lab I	2
CHE 349	Transfer Operations III	2
CHE 351	Plant Design and Economics I	3
CHE 425	Process Dynamics and Control	3
CHE 428	Professional Experience	1
	Approved Professional Elective****	3
	General Education Outcome*	3

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## Senior Year Spring Semester

Course Code	Description	Cr
CHE 346	Chemical Engineering Lab II	2
CHE 352	Plant Design and Economics II	3
	Approved Professional Elective****	3
	Approved Professional Elective****	3
	Approved Professional Elective****	3

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\* **General Education Outcomes:** If all Outcomes are satisfied in fewer spaces than provided, you must take a course of your choice (Free Elective) to fill each remaining space. See the "General Education Outcomes" section at the bottom of page two (2) for details on satisfying these requirements.

\*\* **Mathematics Elective:** MTH 215 or any 300-, 400-, or 500-level MTH course *except* MTH 381.

\*\*\* Or approved **Professional Elective** (see \*\*\*\* below).

\*\*\*\* **Professional Electives:** Half of the Professional Electives are to be 400-level or higher CHE courses taken at URI. **EGR 325 and EGR 326 are permissible approved professional electives.** The remaining courses are to be 300-level or higher in natural sciences, or 400-level or higher in engineering (BME, CHE, CPE, CVE, ELE, ISE, MCE, OCE), or 400-level or higher in MTH.

*All professional electives require prior approval by CHE advisor.*